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# NAVAL POSTGRADUATE SCHOOL

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# THESIS

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SWIM AND SURVIVAL AT SEA TRAINING:  
DOES IT MEET THE NAVY'S NEEDS?

by

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June 1989

Thesis Advisor:

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Swim and Survival at Sea Training: Does  
it Meet the Navy's Needs?

by

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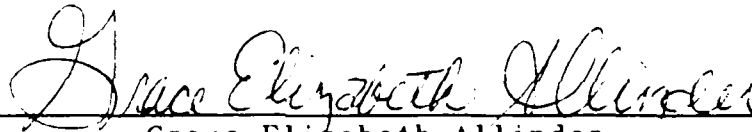
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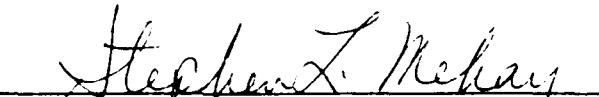
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## ABSTRACT

By virtue of operating in a water environment, the average sailor is exposed to the potential threat of falling or being forced overboard. The Navy requires its sailors to pass a minimum fourth class swim test only at the initial accession points with no follow-on testing or training required. Yet, the MILPERSMAN describes a fourth class swimmer as "a swimmer who needs help". This thesis examined the Navy's swim qualification program to determine the adequacy and consistency of the current training with respect to the Navy's requirements. The approach examined the magnitude of the problem as demonstrated by drowning statistics of Naval personnel and attrition of recruits from bootcamp due to failure to swim qualify. This was followed by an analysis of the current program focusing on program emphasis and implementation. The content of the training across programs, the guidance provided for the training, and the elements of other successful programs were evaluated. Finally, the opinions of experts and model swim and survival programs provided the focus for recommended changes in training policy and implementation.

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## I. INTRODUCTION

### A. DESCRIPTION

The Navy is faced with a paradox for the 1990's: an increasing demand for highly qualified and trained personnel to man increasingly sophisticated combat platforms in the context of a federal budget deficit that threatens the entire Navy budget. Future increases in pay for military personnel will certainly be restrained. Even the Chief of Naval Personnel, VADM Boorda, has retrenched to the goal of "at least preserving the gains we have made" in his testimony to the House Armed Services Committee this year [Ref. 1]. Thus, the Navy is faced with the dilemma of providing better trained and qualified personnel despite a time of shrinking resources. Therefore it is crucial for the Navy to review personnel, demographics, recruiting and training in order to raise the readiness of combat personnel to the highest achievable levels and to reduce manpower attrition to its absolute minimum.

This thesis investigates manpower and safety issues associated with the swimming and survival at sea training provided to Navy recruits at each of the three Recruit Training Commands (RTC's). Early in their eight weeks of bootcamp, all recruits are administered a third class swim test (step off of a five foot high platform into the water, float or tread water for five minutes and swim 50 yards).



[Ref. 2] Those who fail to qualify must then pass a fourth class swim test (same as the third class test except the 50 yard swim is deleted) in order to graduate. Recruits who fail to swim qualify initially are given up to 35 hours of remedial training and sometimes more time, to qualify as fourth class swimmers. Later in training, all recruits are required to attend and participate in one survival at sea class. A demonstrated minimum level of proficiency in survival at sea skills is not required for graduation. At no other time in a sailor's career will he/she be required to refresh or update swim or survival at sea skills unless he/she applies for a special program, i.e., Aviation Warfare, Underwater Demolition Team, or Sea Air Land Team.

The current administration of the swimming and survival at sea programs raises several issues. First, by virtue of being in the Navy, the average sailor is exposed to the potential threat of falling or being forced overboard. Is the Navy providing its sailors with a reasonable chance for survival should such an incident occur? Further, certain jobs on board ship, such as small boat crews, require second class swimmers. The current fourth class minimum with no required follow-on training limits the operational availability of sailors who choose not to upgrade their skills on their own time.

Attrition of recruits due to failure to swim qualify comprise a small percentage of the overall attrition rate for

recruits in bootcamp. [Ref. 3:p. 3-80] The major causes are medical, military and academic unsuitability, fraud or "other", yet the swim program appears to have received a disproportionate share of attention in the effort to reduce recruit attrition. Programs are continually being modified or implemented to reduce swim failure as an attrition factor [Ref. 4. 5]. The Navy cannot afford to continue to lose its recruits because of this deficiency.

Other issues involve the inconsistency of the administration of the swim program among the three RTC's. The minimum water survival qualification requirement has been spelled out in the Naval Military Personnel Manual, yet each RTC has adopted its own training and testing program. Each has experienced varying degrees of success as measured by attrition due to failure to swim qualify and the level of swim skill achieved by recruits. Additionally, the swim qualification for Naval officers is more stringent. Why does this difference exist, especially in light of the fact that enlisted personnel face a greater risk of being swept or falling overboard [Ref. 6]? The Marine Corps and Coast Guard, which also operate in water environments, provide more extensive swim and survival training for their recruits and experience less attrition and greater swim and survival skill levels achieved than does the Navy. What are they doing differently and is it something that could be implemented in the Navy's training?

Finally, the Navy's swim and survival training occurs only once in the career of the average sailor. Other fitness, health or safety programs in the Navy mandate periodic testing, refresher training, drilling or updating of skills, but improvement of swim and survival skill has been left up to the individual member. These issues impact the safety and attrition of enlisted personnel.

## B. PURPOSE

This thesis will examine the Navy's swim qualification program in the context of the issues raised. The purpose is to determine the adequacy and consistency of the current training with respect to the Navy's requirements. Although one may choose from among several different solutions to the problem, changes in curriculum, program implementation and training policies are stressed because they are quantifiable and correctible within the Navy.

The approach will include an overview and indication of the magnitude of the problem as demonstrated by drowning statistics of Naval personnel and attrition of recruits from bootcamp due to failure to swim qualify. This will be followed by an analysis of the current program, focusing on program emphasis and implementation. The content of the training across programs, the guidance provided for the training and the elements of other successful programs will

be discussed. Finally, the study will conclude with recommendations for changes in training policy.

## II. NAVY SWIM QUALIFICATION BACKGROUND

### A. PURPOSE OF THE NAVY SWIM QUALIFICATION

The purpose of the swim qualification requirement of all Naval personnel is to ensure that they have attained the "minimum water survival qualification for service in the Navy" [Ref. 2]. One can infer that, due to the nature of the job and its environment, Naval personnel are exposed to the risk of falling into the water, being forced overboard or encountering an abandon ship scenario during war. In any case, the member may not have access to a personal flotation device (PFD) or other survival gear and must rely on his or her own ability to survive until help should arrive.

One area of question is the timing of the swim test. Since the swim "test should be taken by all members as early as possible in their training period," why is it not included instead as a condition for enlistment? Some view an additional requirement for swim qualification as a factor that would significantly hinder recruiting efforts. Why don't the Military Enlistment Processing Stations qualify potential recruits prior to enlistment? The answer here is most probably due to the fact that the Navy does not want to be held accountable for a water-related accident of a potential enlistee who is not yet under contract [Ref. 7].

## B. THE CURRENT PROGRAM

### 1. Guidance and Description

The Naval Military Personnel Manual (MILPERSMAN) articles 6610120 and 6610140 provide the authoritative guidance to all Naval activities engaged in qualifying swimmers. In addition to the RTC's, officer accession programs such as Officer Candidate School, the officer preparatory schools, ROTC, the Naval Academy, Aviation Officer Candidate School and certain special enlisted programs provide swim training and qualification testing. Article 6610120 refers to the American Red Cross Swimming and Water Safety Manual as the "authoritative text for the swimming procedures, strokes, breaks holds, etc."

The Chief of Naval Technical Training (CNTECHTRA), based in Millington, Tennessee, is the echelon in the chain of command that administers the training curriculum at the three RTC sites. CNTECHTRA Instruction 1540.51A promulgates "Standard procedure for management of recruit swimming testing/training" for all RTC's. This instruction is based on the guidance provided by the MILPERSMAN.

The Lesson Topic Guides (LTG's) are promulgated by CNTECHTRA to all the RTC's. They provide the standardized, detailed lesson format and content for all topics taught at the RTC's. Instructors must adhere to the content provided in the LTG. There are two LTG's which pertain to the water

safety and survival program. LTG 5.5--Swim Qualifications and LTG 4.1--Survival at Sea.

Each RTC has published its own instruction and has conducted the swim test and remedial swim training under its own program. The instructions vary in content and detail, but all reference the MILPERSMAN articles and the CNTECHTRA instruction. Essentially, the third class swim test is administered to recruits at each RTC as specified in MILPERSMAN article 6610120. Recruits who cannot at least qualify as fourth class swimmers are to receive remedial training in order to qualify as minimum fourth class swimmers with continued effort to achieve third class qualification. Until recently, recruits at all three RTC's were given a specified number of hours of remedial swim training each day or week in order to qualify as fourth class swimmers. If a recruit was still unable to pass the test after the maximum number of hours of remedial swim training had been achieved, he/she would be processed for entry level separation (ELS) usually prior to the fifth week of bootcamp [Ref. 8, 9].

A change to this procedure was mandated by CNTECHTRA in March of 1989 for all RTC's. [Ref. 10] All recruits who fail to swim qualify by the end of bootcamp are now to be placed in a "holding" unit after graduation where they will receive daily swim instruction until they qualify. How long

can one of these individuals remain in swim hold status? The RTC's are awaiting further guidance.

During the fourth or sixth week of training (depending upon the RTC), recruits must attend a Survival at Sea (SAS) class at the pool. Participation is required in order to graduate but a minimum demonstrated level of proficiency in the skills for survival is not [Ref. 8, 11].

The SAS class is primarily a lecture and demonstration format conducted at the pool. The RTC's each conduct a different participation exercise at the end of the lecture to familiarize recruits with inflation of dungaree trousers for flotation. RTC San Diego exercises, which were observed for this study, require recruits to jump into the shallow end of the pool wearing only swim trunks and dungaree trousers. Once in the water, the recruits remove their trousers, place them over one shoulder, and wade to the middle of the pool, which is approximately five feet deep. They are then instructed to inflate their trousers using the slam method, described later. They then propel themselves to the deep end of the pool after placing the inflated trousers around their waistlines. Next, they climb out of the water and onto the five foot platform, still holding their trousers. They step off the platform and into the water, inflating their trousers again.

RTC Orlando was observed to have an exercise similar to the last part of the exercise conducted at San Diego.



Recruits enter the deep end of the pool from the side, wearing swimsuits and carrying their dungaree trousers over their shoulders. The trousers are inflated when they enter the water, are then placed beneath the recruits' waistlines, and then the recruits paddle to the opposite end of the pool. RTC Great Lakes was not observed, but according to the Assistant Technical Training Officer, no survival at sea exercise is performed after the SAS class lecture and demonstration due to limited training time [Ref. 12]. These exercises constitute all the actual skill training the average sailor will ever have in survival at sea skills.

## 2. Instructors

Swim instructors at each RTC are Company Commanders. Company Commanders are typically senior Navy petty officers who are assigned to the RTC's for three year tours to lead and train companies of recruits. Upon initial assignment to the command, a potential Company Commander will attend Instructor Training School where he/she will learn basic teaching skills, followed by Company Commander School where the specific checkpoints of recruit training are emphasized. Once school is completed, the Company Commander will lead two or three companies in sequence, then he/she will be rotated into a "hold" job for a period of three to six months before leading another two or three companies. This rotation will continue throughout the remainder of a Company Commander's tour.

One of the hold jobs into which a Company Commander may be rotated is the Water Safety and Physical Training Division (WS&PT), which is responsible for the administration of the swim qualification and physical fitness training. All WS&PT staff members must be certified as American Red Cross Advanced Lifesavers prior to being assigned to the pool. [Ref. 13] The ultimate goal for staff members is to further qualify as American Red Cross Water Safety Instructors (WSI's). Although the number of staff members fluctuates constantly, the RTC's reported the following number of WS&PT personnel assigned as of June 1989, and of those, the number who are currently WSI qualified [Ref. 12, 14, 15]:

	<u>GREAT LAKES</u>	<u>ORLANDO</u>	<u>SAN DIEGO</u>
Total	15	24	24
WSI	4	5	6

Other staff members are continually undergoing training to achieve WSI qualification. It must be remembered however, that at any given time, any of these WSI's may be leading a recruit company and may not be working at the pool.

The ratio of pool instructors to recruits in the pool varies according to individual instructions at the RTC's. Staff ratios at RTC Orlando require a minimum of six fully qualified pool instructors to be present whenever recruits are in the pool, with the ratio never exceeding six to one in the deep end of the pool. RTC San Diego requires a minimum

ratio of four to 18 with one WSI acting as supervisor, and two of the remaining three, certified as advanced lifesavers. Qualifications of the fourth staff member are not specified. The RTC Great Lakes instruction does not specify staff to recruit ratios.

This description contains the basic elements that are common to swim programs across the three RTC's. But, as will be seen later in the analysis, a more detailed description of each program reveals significant differences in their interpretation of the guidance and their administration.

#### C. CURRENT PROGRAM DOES NOT MEET NAVY'S PURPOSE

The current swim program for Navy recruits may not be meeting the Navy's needs. First, in the opinion of various swim experts as well as the instructors administering the swim test, the current training and testing qualifications and emphasis are not sufficient to provide sailors with the minimum skills needed to survive in an open water situation. Additionally, upon careful review of the MILPERSMAN, the individual instructions and the LTC's, the guidance appears ambiguous and open to interpretation. It is difficult to provide a single description of the swim program that would apply to all three RTC's as each program is conducted differently from the other two. The CNO Study Group's Report on Equal Opportunity in the Navy found that "swimming programs were administered differently at each RTC site" [Ref. 3:p. 3-79]. Third, the quality of instruction varies

from that provided by the Coast Guard and Marine Corps recruit training as well as the American Red Cross. These other programs generally have greater success at qualifying more highly skilled swimmers in less time than is allotted for the Navy's remedial swim program. Finally, the inconsistencies between the Navy officer and enlisted swim programs as well as the inconsistencies between the administration of the swim program and other safety or health programs in the Navy lead one to question the efficiency and effectiveness of the current swim testing and training provided to recruits.

### III. DROWNING STATISTICS

Drowning statistics collected by the American Red Cross indicate that over 60 percent of all drowning fatalities involve people who accidentally find themselves in the water. [Ref. 16:p. i] Nonswimmers and novice swimmers account for the majority of drownings. Quite often, beginners who have attained some skills are more dangerous than the nonswimmers, in that they overestimate their abilities in the water.

Drowning statistics of Naval personnel, both on and off duty, may provide further insight into the effectiveness of the Navy's recruit swim program. In response to a request from the Chief of Naval Operations (OP-11), the Naval Safety Center in Norfolk, Virginia collected and analyzed drowning statistics from the period of January 1980 to May of 1984. These data are presented next.

#### A. ON DUTY DROWNINGS

Data were collected by the Naval Safety Center concerning the total number of operational man-overboards which occurred from January 1980 through May of 1984. Mishaps involving ditched or ejected aircrew personnel were excluded from the data.

During this time a total of 291 man overboard mishaps occurred while victims were on duty, resulting in 43 drownings. [Ref. 6] Eighty of these mishaps involved personnel who either intentionally jumped from ships

(suicides and attempts to escape) or were involved in known misconduct. This analysis involves the remaining 211 unintentional man-overboards, 31 of which were fatal.

Aircraft carriers experienced 30 percent of the total man-overboard cases and LPD/LPH's experienced eight percent for a total of 38 percent for flight capable ships. Twenty percent of the man-overboards occurring aboard aircraft carriers were a direct result of being blown off the flight deck during air operations.

One hundred-thirteen mishaps occurred while the ships were underway with the remaining 98 occurring while ships were moored or at anchor, but 81 percent of the fatalities (25 out of 31) occurred while underway.

Table I highlights man overboard experience according to paygrade, indicating that it is the junior, less experienced personnel who are most susceptible to being unexpectedly thrust into situations requiring basic survival skills. None of the fatalities occurred to officers.

TABLE I  
ON-DUTY MAN OVERBOARDS BY PAYGRADE  
JANUARY 1980 - MAY 1984

<u>PAYGRADE</u>	<u>SURVIVED</u>	<u>FATAL</u>	<u>TOTAL</u>	<u>PERCENT</u>
E-1	12	1	13	6
E-2	33	10	43	20
E-3	60	8	68	33
E-4	30	3	33	16
E-5	21	6	27	12

TABLE I (Continued)

E-6	6	1	7	3
E-7	3	0	3	1
E-8	1	1	2	1
Unidentified	2	1	3	1
Officers	<u>12</u>	<u>0</u>	<u>12</u>	<u>6</u>
TOTAL	180	31	211	100

Table II breaks out the number of survived and fatal man overboards by rating. Approximately one third of man overboards occurred to personnel in the seaman rating. About 18 percent of those proved fatal.

TABLE II  
ON-DUTY MAN OVERBOARDS BY RATING

JANUARY 1980 - MAY 1984

RATING	SURVIVED	FATAL	TOTAL	PERCENT
AR/AA/AN	16	2	18	9
BM	16	1	17	9
BT	1	2	3	1
EM	6	0	6	3
EN	8	2	10	5
ET	4	0	4	2
FR/FA/FN	5	0	5	2
GMC	4	1	5	2
HT	11	1	12	6
IC	3	2	5	2
MM	8	1	9	4
RM	3	0	3	1
SR/SA/SN	56	12	68	32
ST	4	0	4	2
OTHERS <sup>1</sup>	<u>35</u>	<u>7</u>	<u>42</u>	<u>20</u>
TOTAL	180	31	211	100

<sup>1</sup>Includes all others in the Navy's 72 ratings. A breakdown of these was unavailable.

Fifty-three of the 211 man overboard incidents involved small boats in various evolutions including boarding, disembarking, raising and lowering. One fatality occurred while the ships were anchored or moored. Another two fatalities resulted from failure of attachment points, parted lines and sheared pins.

Personal flotation devices (PFDs), when worn, appeared to contribute to a very high survival rate (94 percent). Among the 211 personnel involved in man overboard situations, 50 were wearing PFDs. Two who were wearing PFDs died as a result of injuries sustained while falling overboard and another drowned after removing his PFD. Another 56 of the man overboards occurred without PFDs being worn. Eleven of these victims drowned. Of these victims, three were incapable of swimming to a life ring or even staying afloat. Among the remaining 105 man-overboards, the use of PFDs was not reported. Seventeen of these individuals drowned.

These statistics taken separately do not describe a complete picture of on duty drownings, but several inferences can be made:

1. Most of the man overboard incidents and fatalities occurred to enlisted personnel. Officers accounted for only six percent of the total incidents, while enlisted personnel represented 94 percent.
2. Seventy-eight percent of the enlisted man overboards occurred to junior personnel, E1-E5. Ninety percent of the total fatalities occurred to these individuals.
3. Wearing PFDs appears to have contributed to an individual's chances of survival. But, PFDs were not



always worn. Fifty-six man overboards were known not to be wearing PFDs and in another 105 incidents, the wearing of PFDs was not reported. This lends more credence to the fact that the Navy cannot assume that individuals will be wearing PFDs when they fall overboard. Basic water survival skills should be a minimum requirement for all personnel.

4. The data do not provide a complete picture of the cause of death in these incidents. Some deaths may have occurred because of injuries sustained prior to entering the water. Drowning may have been a secondary factor. However, it is useful to compare the death rate among those wearing PFDs from those not wearing PFDs. The difference between the two is most probably attributed to swim skills since the chances of being injured prior to or upon impact with the water should be equal for both groups.

A separate but equally important issue involves the number of Naval personnel who have died in off-duty drownings. From January 1980 to May 1984, 146 personnel lost their lives in water-related mishaps occurring off the job, typically in recreational activities.

#### B. OFF DUTY DROWNINGS

Off duty drownings appear similar to on-duty man overboards in terms of paygrades. Most of the drownings involved junior enlisted personnel. Table III breaks down the number of drownings by paygrade.

TABLE III  
OFF-DUTY DROWNINGS BY PAYGRADE  
JANUARY 1980 - MAY 1984

<u>PAYGRADE</u>	<u>NO.</u>	<u>PERCENT</u>
E-1	16	11
E-2	30	20
E-3	32	22
E-4	32	22
E-5	12	8
E-6	11	8
E-7	0	0
E-8	<u>2</u>	<u>1</u>
SUBTOTAL	135	92
OFFICERS	<u>11</u>	<u>8</u>
TOTAL	146	100

Table IV presents off duty fatalities by rating. These fatalities bear no similarities to on-duty victims with the

TABLE IV  
OFF-DUTY DROWNINGS BY RATING (THREE OR MORE INCIDENTS)  
JANUARY 1980 - MAY 1984

<u>RATING</u>	<u>NO.</u>	<u>PERCENT</u>
AA	5	3
AB	6	4
BT	7	5
EM	5	3
ET	7	5
FT	5	3
MM	7	5
SR/SA/SN	24	16

TABLE IV (Continued)

SH	5	4
OTHERS <sup>2</sup>	<u>64</u>	<u>44</u>
SUBTOTAL	135	92
OFFICERS	<u>11</u>	<u>8</u>
TOTAL	146	100

exception of the seaman rating which accounted for over 16 percent of the total off-duty drownings.

Among the off-duty victims, 69 drowned without witnesses present. Information concerning accident causation was not available. In none of these drownings however, was suicide or suicidal intent expressed. Since most drowning victims are seldom strong swimmers, the role of inadequate swim skills cannot be ignored in these accidental deaths [Ref. 6]. Alcohol was involved in 19 of these drownings and the use of drugs was reported in one case. The degree to which these substances may have influenced the ability to survive is unknown.

The investigative reports indicated that swimming ability was not a factor in 16.4 percent (24) of the 146 drownings. Seventeen incidents involved victims who were scuba diving/snorkeling, indicating they were probably more skilled than fourth class swimmers; four drowned as a result of

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<sup>2</sup>Includes all others in the Navy's 72 ratings. A breakdown of these was unavailable.

injuries received in dives from elevated platforms and three others drowned as a result of injuries from falls and water skiing accidents. The single greatest cause of recreational drownings was boating accidents with 25 deaths attributed to this one activity.

These data are also incomplete. Many of the victims drowned without witnesses and complete details were not always provided in the reports. But, several items are worth mentioning:

1. By 1979, the American Red Cross reported that the national drowning rate had dropped to three drownings per 100,000 citizens [Ref. 16:p. 2]. Off-duty drownings among Naval personnel from January 1980 to May of 1984 averaged 30 drownings per year. This translates into a drowning rate of six per 100,000 enlisted personnel, or twice the national average. The drowning rate of officers was more closely correlated to the national average at the rate of 3.5 drownings per 100,000 officers.<sup>3</sup> Although an interesting reference point, these numbers are too small to be sure of their stability across time.
2. The drowning rate for enlisted is more surprising in that all enlisted personnel must pass the Navy swim test, whereas the general population is not required to do so. However, Naval personnel may be more likely to engage in water-related activities than the general population.

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<sup>3</sup>In 1984, 495,800 enlisted and midshipmen and 68,900 officers were in the Navy [Ref. 17]. One hundred thirty-five enlisted drownings/4.5 years = 30 drownings per year.  $30/495,800 = .00006 = \text{six drownings per } 100,000 \text{ enlisted personnel.}$  Eleven officer drownings/4.5 years = 2.44 drownings per year.  $2.44/68,900 = .0000355 \text{ or } 3.55 \text{ drownings per } 100,000 \text{ officers.}$

Data which have been subsequently collected but not fully analyzed for the period of January 1984 through December 1988 indicate:

1. There were 285 man-overboard incidents with eight confirmed dead and 13 missing but never recovered for a total of 21 presumed fatalities [Ref. 18].
2. There were 98 off-duty fatalities with five deaths occurring among officers and 93 among enlisted personnel [Ref. 19].
3. Seventy-six percent of the enlisted off-duty drownings occurred to junior personnel, E1-E5.
4. As in the previous time period, alcohol was a factor in several of the off-duty drownings.

Again, the data collected for this time period do not indicate in all cases whether members died of injuries sustained prior to or upon impact with the water or of drowning. Some of the off-duty drownings occurred while members were engaged in water-skiing, scuba diving or boating incidents but 45 of the 98 deaths occurred while members were swimming, either intentionally or unintentionally. Many of these occurred in salt water where wave and current action may have played a role.

In many instances, the investigative reports cited no known reason for the drownings. In several cases, the victim's Navy swim qualifications were checked. Of the 29 cases which reported the victim's swim qualifications, six drownings occurred to personnel who held a fourth class qualification, 22 occurred to third class, one occurred to a second class and two occurred to first class swimmers. Swim

qualification levels were not reported in the other 67 enlisted cases.

In many of these cases, whether a victim's swimming ability played a role in his/her drowning is uncertain. But many of the narrative reports describing the circumstances of these drownings could not offer any possible reason for these deaths except that the members were known to be weak swimmers. The Commander, Naval Safety Center stated, "Accident reports reveal that many of these victims were poor swimmers and seemed to lack even the most basic understanding of water hazards." [Ref. 20] The Naval Safety Center strongly advocated upgrading the minimum swim qualification standard.

In a letter to CNO (OP-135) in May of 1983, the Commander of the Naval Safety Center stated that loss of life due to drowning:

. . . impacts the Navy's operational readiness directly and adversely . . . Most drowning victims are not intentional swimmers. The ability to do no more than float for a few minutes is considered inadequate preparation for most water emergencies especially when an individual unexpectedly finds himself in the water in a panic condition. More is needed for a service whose mission environment is on, under and above water. [Ref. 20]

He then advocated increasing the minimum requirement to third class.

After reviewing a sample of drowning statistics over a five year period, CNO responded with a letter in December of 1982:

In view of the relatively insignificant part swimming skills played in preventing these fatalities, swimmer, fourth class, is considered to be a reasonable minimum water survivability qualification standard for service in the Navy. [Ref. 21]

The letter then requested CNET to revise the General Military Training (GMT) program to provide opportunity during accession training to achieve the goal of third class qualification without recycling or holding back students in the pipeline. The Naval Safety Center was requested to identify to OP-11 "training requirements formulated to support a strategy attending the total problem of increased water safety."

In May of 1984. The Naval Safety Center responded with non-concurrence to CNO's conclusion that swimmer training and qualifications were adequate. [Ref. 6] Their letter disagreed that the GMT program would provide the follow-on training required to qualify third class swimmers due to potential lack of facilities, personnel, resources and motivation. This letter then presented its analysis of drownings during the period of January 1980 to May of 1984. The letter concluded with 26 recommendations to CNO to improve the swim program and requirements of Naval personnel. Central to these recommendations were:

1. To make training realistic and comprehensive and provide it initially when a person enters Naval service (RTC) and reinforce the training throughout his/her career.
2. To establish the third class swim qualification as the minimum requirement.

CNO responded in June 1984:

There doesn't appear to be any documented condition that supports an absolute requirement for third class swim qualification at Recruit Training Centers . . . fourth class swimmer must be necessarily upheld as a reasonable minimum water survival standard since no positive correlation was established between water mishaps and swimming capabilities. [Ref. 22]

In July of 1984, the Naval Safety Center reported to CNO the results of an unofficial investigation of the swim qualification levels recorded in personnel records. [Ref. 23] Of 72 drowning victims on file, 58 had been classified as third class swimmers and 14 had no swim classification recorded at all. This prompted an investigation of the RTC's.

In Orlando, the Safety Center found about 32 percent of the graduates during the previous 13 months had achieved fourth class swim qualification, yet the Classification Branch had automatically stamped every graduates' Page Three as third class swimmer qualified.

In Great Lakes, 29 percent of the graduates in the previous seven months had been identified as fourth class swimmers according to WS&PT records, but had been automatically stamped as third class swimmers. This practice was changed to identify fourth class swimmers with a Page 13 service record entry during the same month as the Naval Safety Center's investigation.

San Diego had a similar experience. Twenty-eight percent of its recruits during the previous 13 months had been



identified as fourth class swimmers. But, all graduates had been automatically stamped as third class swimmers up until six to eight months prior to the investigation.

The implications are that future drowning victims may be incorrectly identified as third class swimmers when in fact they only achieved fourth class status. This may explain why 22 of the 31 drowning victims between January of 1984 and December of 1988 in which swim qualification was reported, were third class swimmer qualified. It may also help explain why CNO determined there was no relationship between swim qualification and drownings if the data used to make that determination were incorrect. CNO concurred with the Naval Safety Center that record keeping must be made accurate [Ref. 24].

Since the time that this correspondence took place, little has happened. Although some of the 26 recommendations made by the Naval Safety Center were concurred in by CNO, no changes have been promulgated by that level. CNO did not concur with the major recommendations. The swim program at the RTC's has remained relatively constant with some minor initiatives taking place at the individual centers.

Attrition at the RTC's due to failure to swim qualify has prompted recent and forthcoming changes in policy however, which will greatly impact the swim program. Attrition will be discussed in the next chapter.

#### IV. ATTRITION

Attrition, for whatever reason, is a major concern Navy-wide. Fifteen percent of the total attrition in the Navy occurs in bootcamp. [Ref. 25] Attrition represents a tremendous cost to the Navy in terms of the continuing pressure to recruit and train individuals to fill vacancies left by the more experienced personnel. In today's era of defense budget cutting, ways to decrease attrition are being seriously studied.

Recruits who have been unable to meet the minimum fourth class swim qualification requirement after remediation have been released from the Navy and sent home. Each of the three RTC's reported a different picture regarding the attrition of recruits due to failure to swim qualify. Data were scant and difficult to compare due to availability from different periods of time and only from recent years. Although incomplete, the available data do provide some insight into the swim requirements issue. Great Lakes reported the following swim related attrition totals [Ref. 26]:

<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
7	3	91

Why the sudden increase in FY88? The Technical Training Officer stated that attrition due specifically to inability to swim qualify was not separately identified until that

time. Previously, most swim failures had been entry-level separated (ELS) under a "catch-all" code for unsuitability. Swim failure was usually associated with an underlying motivational or behavioral problem and thus was not always separately identified. The few numbers in FY86 and FY87 represented recruits who had been identified as having a swim "phobia" by medical and thus were characterized as pure swim failures. The remainder of those who failed to swim qualify could not be distinguished from other causes of attrition.

RTC San Diego reported the following attrition figures [Ref. 27]:

<u>CY87</u>	<u>CY88</u>
136	80

San Diego attributes the decline in its swim attrition in 1988 to the change made in the remedial swim program. Instead of providing remedial swim training to swim failures early in bootcamp, swim failures are now identified after the initial screening but do not return to the pool for remedial training until the fifth week. According to their philosophy, by this time recruits can "see the light at the end of the tunnel" and are more highly motivated to qualify.

RTC Orlando experienced very little swim attrition compared to the other two RTC's and reported the following:

<u>FY88</u>	<u>OCT 88 - DEC 88</u>
8	0

Seven of the attrites in FY88 were women but women comprised only a third of the total recruit population. Orlando is the only training center for women.

Factors which may contribute to different attrition pictures at the three RTC's are:

1. The differences in the remedial swim programs conducted at the RTC's. The Report on Equal Opportunity found that Orlando offered recruits more hours of remedial swimming and also had the lowest attrition due to swim failures [Ref. 3:p. 3-79].
2. Differences in the facilities available and the number of recruits processed through each center. Orlando has an outdoor, heated, olympic (50 meters by 25 yards) pool while Great Lakes' pool is 30 yards by 50 feet and San Diego's pool is 25 yards by 15 yards. Remedial swim training can be very congested, especially during peak summer loading. Great Lakes trains the greatest number of recruits (about 40 percent) with the remainder divided almost evenly between the other two RTC's.
3. Recruits typically report to the RTC that is also co-located with their follow-on "A" school. Many of the "A" schools which require the higher ASVAB (Armed Services Vocational Aptitude Battery) scores are located in Orlando, i.e., Nuclear Power School, etc. Additionally, female recruits, which are trained only in Orlando, are higher quality on the average than the average male recruit in the Navy. The criteria for women entering the Navy is more stringent than for men due to the fact that the number of women enlistees exceed the billets available. This suggests that the average mental category of recruits in Orlando is higher than that of recruits in Great Lakes and San Diego. Evidence indicates that a significant portion of nonswimmers are also assigned to the Academic Remedial Training (ART) program because of poor reading comprehension skills [Ref. 5]. The social disadvantages which may affect their acquired swim skills [Ref. 30] may also affect the nonswimmers' educational backgrounds as well. If this hypothesis is accepted, the low swim attrition at RTC Orlando, versus the other two RTC's may be partially explained.

The CNO Study Group's Report on Equal Opportunity in the Navy examined attrition data at the RTC's. In reviewing the data, the group was hindered by the fact that 40 percent of the attrition at all three sites was coded as "reason unknown". Their analysis was performed on the data which were available [Ref. 3:p. 3-78].

The Study Group found that the two major reasons for recruit attrition were Medical and Unsuitability. Unsuitability includes failure to swim qualify, academic failure and military failure. They found that failure to swim qualify constituted .62 percent of all attrition for caucasians and 6.46 percent of all attrition for blacks in FY87. By contrast, medical reasons constituted 47 percent and 28 percent, and military unsuitability accounted for 26 percent and 25 percent of all attrition for each group respectively.

Although attrition due to swim failure is comparatively small, the question of why blacks have a much higher attrition rate was raised by the Study Group. RTC San Diego in particular encountered a significantly higher overall attrition rate for blacks in FY87, but black recruits ranked highest in attrition due to swim failure at all three RTC's. In San Diego, 102 or 75 percent of the total swim failures in 1987 were black, and in 1988, 62 or 78 percent of the swim failures were black [Ref. 27]. Yet, blacks comprise only 15

percent of the Navy's total enlisted population [Ref. 3:p. E5-20].

Many scientific studies have been conducted to determine if physiological factors, i.e., greater bone density and lean body mass in blacks, can account for this phenomenon. The assumption is that such factors would increase the difficulty blacks would encounter in floating and subsequently acquiring swim skills. Although some minor differences do exist [Ref. 30, 31] most researchers have agreed that societal factors play a much greater role in black swim failures. Mike Buono, Ph.D. at San Diego State University, reported that swim performance was significantly affected by a swimmer's skill level (stroke efficiency measured via a swim index). Percent body fat (body density/buoyancy factors) had little effect on swim performance [Ref. 32].

In a literature review conducted by the Naval Health Research center, two researchers found:

From the evidence presented thus far, it may be suggested that cultural and psychological factors (leading to the non-development of swim skills) are more responsible for black recruits failing the swim test than body composition factors: though body composition factors could certainly complicate the acquisition of swim skills. [Ref. 30]

Societal factors indicate that blacks typically have less access to swimming facilities and therefore less experience in developing swim skills prior to entering bootcamp. The Report on Equal Opportunity in the Navy found the same phenomenon in the Aviation Officer Candidate School program

where candidates must complete an intensive swim program. Black officer candidates were failing the swim qualification and were being held back in training or were being attrited in disproportionate numbers. The TADPOLE program was developed and implemented at the Aviation Officer Candidate Preparatory School to help prepare a candidate for the swim program prior to entering AOCS. Although TADPOLE has helped access 45 minorities, 27 percent of the entrants in this program have attrited either in TADPOLE or in AOCS because of failure to complete swim qualifications [Ref. 3:p. 3-56].

The Study Group recommended CNET to [Ref. 3:p. 3-57, 3-87, 88]:

1. Minimize the use of "reason unknown" code in RTC attrition data.
2. Modify the TADPOLE program to improve swimming ability of candidates to a level that would enhance completion of the swim qualification test at AOCS.
3. Evaluate the significantly higher black attrition rates at RTC San Diego and implement measures to reduce them.
4. Evaluate the swimming program at all three RTC sites and revise the swim program to reduce swimming attrition.

In March of 1989, a pilot program mandated by CNTECHTRA began at all three RTC's. Recruits who could not qualify as minimum fourth class swimmers were to remain in bootcamp until graduation. At that time, they were to be placed in a holding company and were to return to the pool daily to attempt the swim qualification. Further guidance was to be issued concerning the final disposition of these recruits.

In April, a CNTECHTRA message was issued to all RTC's which stated, "Effective immediately, nonswim as a cause of recruit attrition is terminated . . . "[Ref. 4]. Personnel who fail to achieve the fourth class minimum swim qualification were to remain in bootcamp for up to three weeks after graduation in order to pass the test. If after that time they still had not passed the test, they were to sign a Page 13 stating awareness of their deficiency and the importance of passing the test as soon as possible. According to CNO (OP-112C), these individuals are to be assigned as GENDETS, they will not go to sea, and they will be precluded from all further training and advancement until the swim qualification is achieved. Final guidance is still awaited from OP-01 [Ref. 33].

The impact this guidance will have on recruit motivation to pass the swim qualification is yet to be seen. If a recruit knows he doesn't have to pass the test, or if he doesn't want to go to sea, what will be the outcome?

Finally, if the impetus behind this action is to curb attrition, what will happen after these swim failures leave bootcamp? Their use to the fleet, where they are needed, has been severely limited. The Navy may end up paying later as these individuals fail to swim qualify during their first term and are forced to attrite after all.



## V. ANALYSIS OF THE SWIM PROGRAM

### A. PROGRAM EMPHASIS

The current swim program for Navy recruits may not be meeting the Navy's needs. In the opinion of various swim experts as well as the instructors administering the swim test, the current training and testing qualifications and emphasis are not sufficient to provide sailors with the minimum skills needed to survive in an open water situation [Ref. 34, 35, 36]. The current swim program emphasizes water safety and the swim skills useful in recreational swimming vice the skills necessary to survive in open water. The safety of recruits while undergoing testing and training at the pool is emphasized in all the guidance. Minimum qualification for all instructors at the pool is Advanced Lifesaver. Therefore, there is no doubt the potential hazard of a recruit drowning at the pool has been minimized. But the real purpose of training and testing may not be emphasized enough.

The U.S. Navy Water Survival Instructors Manual was developed by the Training Program Model Manager at the Naval Aviation Schools Command in Pensacola, Florida by direction of the Chief of Naval Education and Training (CNET). CNET is also the next echelon in the chain of command over CNTECHTRA. The manual's purpose is to "provide the information necessary to teach naval personnel to survive in open water survival

situations." This manual has not been promulgated to the RTC's. The scope of the manual describes survival swimming skills:

The survival swimming skills, techniques and procedures for survival swimming and rescue outlined in this manual are applicable to all Naval personnel. Many of the techniques presented in this text differ from the techniques described in recreational swimming manuals. Experts in the water survival training field have developed these procedures specifically for teaching Navy personnel how to survive at sea. Open water survival swimmers are subject to conditions not normally encountered in recreational and competitive swimming. The most significant difference, of course, is motive. In most survival situations, the motive is to survive rather than swim for pleasure. Additionally, survival swimmers may face factors such as cold water, darkness, negatively buoyant equipment, restrictive clothing, rough seas and possibly incapacitating injuries.

The U.S. Navy Water Survival Instructor's Manual provides descriptions of the specific water survival skills, tailored to Navy scenarios, that should be taught to all members. A brief description of each follows.

#### 1. Survival Flotation

The ability to remain on the surface of the water in a position that allows comfortable breathing without tiring is the most frequently required water survival skill. This technique is derived from the "drownproofing" method originated by the late Fred R. Lanoue, former head swimming coach at the Georgia Institute of Technology. [Ref. 37:p. 29] Body position is face down in the water with the waist bent, arms on the surface, elbows bent and legs dangling beneath. The head is raised out of the water to breathe, then dropped back into the water to rest. In this position, a member can

survive for an indefinite period of time, given the water temperature is not below 72 degrees. Almost all recruits observed during the float portion of the third class or fourth class swim test chose to float on their backs. This method is fine in calm water but can lead to water aspiration and drowning in rough water.

## **2. Treading Water**

Supporting the body in a near vertical position with the head above the surface for some period of time will be required in almost every water survival situation [Ref. 37:p. 37]. This allows the survivor to check the surface for floating objects, other survivors, rescue craft, etc. and allows him to activate flotation equipment or signal rescue craft.

## **3. Survival Strokes**

The four basic survival strokes are the breaststroke, the sidestroke, the elementary backstroke and the American crawl. Each stroke has distinct advantages over the others but all enable a survivor to move away from danger (sinking ship or burning surface oil) or to safety if it is within a reasonable distance.

## **4. Inflation of Clothing**

The shirt, hat and trousers can be removed and/or inflated once in the water, and used as a flotation device to support the survivor. The specific methods for trouser inflation are described in later.

## **5. Abandon Ship**

When the order to abandon ship is given, or a sailor accidentally falls overboard, he must assume as nearly vertical a position as possible to avoid injury upon impact with the water.

## **6. Underwater Egress**

Anyone traveling over the water, especially Naval personnel who fly as crew or passengers should be familiar with the hazards of being in a vehicle or craft and being suddenly submerged in the water. In-rushing water, darkness, disorientation, vertigo, floating obstructions, cold water and jammed exits are all hazards which can be expected in an underwater egress situation. This skill requires calm and maintaining orientation with surroundings in order to safely egress.

## **7. Surface Debris Swimming**

Swimming through debris may be necessary following egress from an aircraft or ship abandonment. Floating objects may be used for personal flotation. Floating liquids such as fuel oil or chemicals should be avoided as they may interfere with vision, cause respiratory problems and irritate the skin. A modified breast stroke is best used for swimming through surface debris. When swimming through oil or fuel, the survivor should swim into the wind and underwater, breaking the surface away with his hands when he comes up for air.

## 8. H.E.L.P.

The Heat Escape Lessening Posture, H.E.L.P., should be taught to survivors in order to increase their chances of survival should they encounter cold water. Hypothermia is a danger in all water survival situations. Since a great deal of body heat escapes from the head, the drownproofing method is not the best technique in cold water. But, H.E.L.P. can only be used if the member is wearing a PFD. The body is curled up in a fetal position with the head supported out of the water by a PFD.

## 9. First Aid

Basic first aid knowledge. i.e., CPR, treatment for burns, dehydration, hypothermia, bleeding etc. should be a requirement for all personnel.

These survival skills, when contrasted to the current fourth class minimum swim qualification, indicate the Navy may not be doing enough to prepare sailors to survive in open water. Although recruits receive a lecture in survival swim skills and may be required to participate in a clothing inflation exercise, no demonstrated minimum level of proficiency in survival skills is required in order to graduate from bootcamp.

Further, the opinions of various personnel. i.e., experts in survival swim training, commanding officers, and WS&PT personnel etc., indicate more and better training is needed as seen below. For example, discussions with Mr. Ray

Smith, the Naval Aviation Water Survival Training Program Model Manager and former Navy diver for 25 years, indicate his opinion that there is a distinct difference between recreational swimming and safety and open water survival skills which should be taught to all members in the Navy [Ref. 38].

The Naval Safety Center, which has collected data on water-related incidents and deaths of Naval personnel due to drowning states, "Existing requirements do not adequately prepare a person to survive real-life emergencies as would be encountered in an abandon ship scenario" [Ref. 19].

The Commander of Carrier Air Early Warning Squadron 113 issued a general use Naval Aviation Hazard Report in February of 1984 after surveying the crewmembers of his squadron. [Ref. 39] He found that a significant number of his personnel did not have the necessary skills required for survival in a deep water emergency situation. Results indicated the following:

1. If blown off the flight deck of an aircraft carrier, 30 percent of all non-aircrew personnel indicated they would require rescue immediately in order to keep from drowning.
2. Twenty-five percent did not know the proper techniques for abandoning ship from an elevated flight deck.
3. Thirty-five percent were unfamiliar with the techniques a search and rescue helicopter would use to rescue them.

4. Twenty-two percent did not know how to preserve body heat in cold water.
5. Sixty-two percent did not know how to drownproof.

The message stated,

As frequently as personnel working on an aircraft carrier flight deck are blown overboard, the potential for lives lost at sea due to poor survival skills is obvious . . . The results of our squadron survey are disturbing and alarming . . . As long as personnel are exposed to the water environment, they must be given a more reasonable chance to survive in that environment . . . there is no doubt in my mind that some of our shipmates would be alive today if they had undergone recurring water survival training following bootcamp or officer training school.

As a result of the survey, the Commander of the Squadron stated he would establish an in-house program to train crewmembers in water survival, until the Navy could establish such resources.

Another message issued by the Commander, Naval Surface Forces Pacific (COMNAVSURFPAC) in May of 1983 recounted the incident of a sailor who fell overboard while his ship was on deployment in the western Pacific. Although the incident occurred during daylight and in calm seas and despite the fact that the man was thrown a life ring and the ship was maneuvered in less than four minutes, the sailor drowned. Investigation revealed the man was classified as a fourth class swimmer. COMNAVSURFPAC advocated modifying the minimum swim qualification to third class swimmer and he also advocated that this qualification be accomplished in bootcamp [Ref. 40].

On site discussions with six WS&PT personnel in San Diego and Orlando indicate the general opinion that recruits do not possess sufficient survival skills prior to graduating from bootcamp [Ref. 35, 36]. In a telephone conversation, a WS&PT staff member in Great Lakes concurred [Ref. 41]. No instructors were interviewed who felt the current program was adequate. Time and personnel resources are extremely limited just to qualify recruits as minimum fourth class swimmers.

LT Art Conklin, The Damage Control Assistant aboard the frigate USS STARK [FFG-31] when it was attacked by two Iraqi exocet missiles in May of 1987, recounted the experiences of sailors who were blown off the ship or had to abandon ship upon impact. [Ref. 42] The attack occurred after nightfall and the ship steamed ahead over the horizon for approximately an hour and a half after impact. Crewmembers were strewn into the water, some with and some without PFD's. They spent in excess of 12 hours in the water before rescue. Upon rescue, LT Conklin recalled, the biggest complaint among the survivors was their lack of mental preparation to endure such an ordeal. Because the incident occurred at night, there was no possible way to begin a rescue search until dawn, yet ships conduct man overboard drills to respond to rescue within minutes. The sailors from the STARK were able to join together and form a ring for protection and companionship but still found the specter of



spending such a lengthy period of time in the water for which they were unprepared, quite difficult.

Leonard W. "Dutch" Kooper was a young seaman on board the heavy cruiser, USS HOUSTON when it was sunk by the Japanese off the coast of Java in 1942. Because there were few PFD's and liferafts available, these were given to the wounded. The Chinese stewards did not know how to swim and therefore chose to go down with the ship when the abandon ship order was given. The rest of the survivors spent as much as 18 hours in the water, avoiding enemy fire and trying to swim ashore. Kooper recalled that all those who survived were good swimmers [Ref. 43]. Although the waters were infested with sharks, the greatest difficulty encountered by the survivors was the fuel oil on the water which burned their skin and eyes, and caused their skin to peel off a week later. Of the original 1,064 crew members, 368 survived and or swam ashore but were eventually captured by the Japanese [Ref. 44:p. 202]. 292 of those survived the prisoner of war camps. The crew had been frequently encouraged to exercise by swimming around the ship while at anchor. This helped prepare those who were able to swim to survive the water, which eventually increased their chance of surviving the war.

These individuals have all served in the Navy at various places and times and have had a wide range of experiences in the area of survival at sea. Although they expressed different areas of concern, they were unanimous in

the opinion that more needed to be done to prepare sailors, whether physically or mentally, to survive the open seas. The emphasis in the swim qualification program on recreational swim skills vice survival at sea skills has obscured the primary objective of ensuring sailors have the minimum skills needed to save their own lives in open water survival situations.

## **B. PROGRAM IMPLEMENTATION**

### **1. Ambiguity in the Guidance**

The guidance which governs the swim qualification for Navy recruits appears inconsistent with respect to requirements and the articulation of those requirements. An analysis of this is presented next.

The three RTC's trained 71,600 recruits in fiscal year 1988 and projections remain close to that figure for the next three fiscal years [Ref. 17]. The MILPERSMAN describes the minimum swim qualifications which all recruits must achieve in order to graduate from bootcamp. But upon careful reading of the two articles, the wording of these requirements is ambiguous and confusing:

To qualify as a swimmer, third class, a member must enter the water feet first from a minimum height of five feet and remain afloat for five minutes. During this time he must swim 50 yards using any stroke or combination of strokes. This test should be taken by all members as early as possible in their training period. Those who are able to enter the water as prescribed and float for five minutes, but are unable to swim the required 50 yards will be classified as swimmer, fourth class and should be given instruction in fundamental swimming skills with a view to

achieving swimmer third class qualification as soon as practicable. In every case, a swimmer fourth class is a "swimmer who needs help" and should continue to receive additional instruction in fundamental skills. Such members should not be recycled or held back in their training schedule for this reason alone. Those members who are unable to enter the water as prescribed and/or are unable to float for five minutes are to be classified as nonswimmers and shall be given instruction in fundamental swimming skills with a view to achieving designation as a swimmer fourth class thus meeting the minimum water survival qualification for service in the Navy. The test for swimmer, third class is the official Navy Standard Basic Swimming Test. While the minimum swimming qualification is swimmer fourth class, the attainment of swimmer, third class designation at the earliest practicable time remains a firm basic goal for all members who have not attained that level of swimming proficiency. [Ref. 2]

From this article, it is difficult to ascertain what the exact requirement is. The Navy is to test for third class swimmer, yet fourth class swimmer is the accepted minimum, yet members should keep trying to achieve third class proficiency. Another look at the article yields more questions:

1. What is the significance of the five foot high platform? Is it supposed to simulate falling off a pier or being swept off the flight deck of an aircraft carrier?
2. In the third class swim test, are the five minute float and 50 yard swim sequential activities or can they be completed concurrently as the use of the word "during" implies? (The RTC's have different interpretations of this).
3. What tracking system is in place to ensure all fourth class swimmers attain the third class designation at the "earliest practicable time?" (None exists).

The MILPERSMAN goes on to provide a description and the requirements for attaining qualification as a swimmer

second class. This swimmer is classified as "one who can 'take care of his or her ownself' without assistance in a swimming survival situation." Next, a first class swimmer is described as someone "who not only can 'take care of his or her ownself' without assistance in a swimming survival situation, but is able 'to help others in case of emergency.'"

It is curious how the third class swim test is the "official Navy Standard Basic Swimming Test" administered to all recruits, but no description of a third class swimmer's ability is provided in the MILPERSMAN article. A description is provided for first, second and fourth class swimmers.

There are also areas in the guidance which appear inconsistent in their wording and use of previously defined requirements. MILPERSMAN article 6610140 describes survival training requirements. [Ref. 45] It states:

Every member assigned to a Naval vessel or aircraft must be given the proper survival instructions to ensure knowledge and ability in the following items:

- a. He or she should be a capable swimmer. He should receive instruction on how to swim through debris and burning oil . . . .
- d. He or she should know how to leave a sinking ship or aircraft . . . .
- g. He or she should know how to care for his or her ownself and shipmates if they become survivors either on a raft or in the water, supported either by a life preserver or by their own efforts . . . .

Webster defines ability as, "the quality of being able to do something; physical, mental, financial, or legal power to perform. A natural or acquired skill or talent." It is logical to conclude then that every sailor assigned to a ship must not only have the knowledge but must also possess the ability to survive should his/her ship encounter hostile action and/or he/she faces an open water survival situation. In a study conducted by the Naval Health Research Center, results suggested that swim performance is affected by several variables, the most important of which is probably swimming skill, contrasted to other "fitness" activities such as running and cycling performance which were found to be more highly correlated to maximal oxygen uptake (aerobic capacity) rather than skill [Ref. 32]. This would indicate that swimming ability is a skill which must be acquired through practice and drill.

The U.S. Navy Water Survival Instructors Manual states:

Learning a physical skill such as the breast stroke or treading water requires actual experience in performing that skill . . . Learning is an active process . . . The process of learning a skill appears to be much the same, whether it is a motor (physical) or mental skill. Learning physical skills involves more than muscle use. The students must refine the coordination between their muscle, visual and tactile senses. This always requires practice. Sometimes it will require repetitive drills, especially when students are not comfortable in the environment (i.e., water) in which they are practicing [Ref. 37:p. 3]

All of this implies that swimming is a skill that takes time and practice in order to perform.

MILPERSMAN article 6610140 states that every member should be a "capable" swimmer. What is capable? A first,

second, third or fourth class swimmer? If the MILPERSMAN is to remain consistent with itself, the fourth class swimmer who has met the "minimum water survival qualification for service in the Navy" must also be a "capable" swimmer. Roget's Thesaurus lists synonyms for the word "capable" under the broad heading of "skill". "Competent", "efficient", and "skillful" are a few of the words listed with similar meaning. Yet the MILPERSMAN has described the fourth class swimmer as a "swimmer who needs help."

The U.S. Navy Water Survival Instructors Manual describes floating fuel or oil from a ditched aircraft or sinking ship as posing a "definitely difficult survival situation but not an impossible one" [Ref. 37:p. 69]. The prescribed underwater swimming techniques are more difficult to master than the swim skill demonstrated in a third or fourth class swim test.

Although this instruction is provided to all recruits in a single SAS lesson, a demonstrated minimum level of proficiency of such skill is not required to graduate.

CNTECHTRA Instruction 1540.51A specifies:

Recruits failing the initial third class swim test will be retested the following day for fourth class swimmer . . . Recruits failing the third class swimming test will be provided a minimum six hours per week of remedial swimming training until third class swimming qualification is achieved.

The above sections from the CNTECHTRA instruction appear confusing. A recruit who fails the third class swim

test is to return the following day to try only to pass the fourth class test. What if he was able to pass the fourth class test initially? Individuals who fail the fourth class test are not addressed at all. The next section states that recruits who fail the third class test will return for remedial swim training until third class qualification is achieved. Upon observation, this is not what is actually taking place at all the RTC's. Because fourth class swimmer is the minimum water survival standard, and water safety instructor personnel and training time are limited, once a recruit passes the fourth class swim test, whether at the initial testing or later in training, he does not necessarily return to the pool for additional swim training to qualify for third class. This varies between the RTC's. CNTECHTRA Instruction 1540.51A goes on to say:

If the minimum water survival fourth class swimming qualification is not achieved by the end of the regular recruit training cycle, unsuccessful individuals will be screened by the appropriate aptitude board(s) where final disposition will be given . . . those personnel who fail to achieve third class qualification but have passed the fourth class test at the completion of recruit training will have the following Page 13 entry put into their service records:

I understand my fourth class swimmer classification identifies me as a swimmer requiring additional training. For my own personal safety and enhancement of my Naval career, I must improve my classification to a minimum of swimmer third class which requires that I be able to swim a distance of 50 yards by any method. I acknowledge that it is my responsibility as a part of my physical fitness program to meet the qualification of the test. I acknowledge that my future assignments and further advancement may be affected until such time as I demonstrate this capability.

CNTECHTRA Instruction 1540.51A describes the Page 13, an administrative remarks statement, which is placed in the service record of all fourth class swimmers. This Page 13 implies that someone will follow-up on the young sailor's swim qualification out in the fleet, but this is not so. No tracking system exists for such follow-up to take place. The responsibility for "personal safety" is completely left up to the individual. It is also interesting that the Page 13 describes the swim qualification as part of the sailor's "physical fitness" program. The swim test has to do with water survival and little to do with physical fitness as was documented by the Naval Health Research Center study [Ref. 32].

Finally, it is curious that the CNTECHTRA instruction fails to mention or reference the MILPERSMAN article 6610140 which requires members to have "knowledge and ability" in specified survival training requirements.

LTG 4.1 states:

Survival in the water depends on four things: (1) your knowledge (2) your equipment (3) your training and (4) your self control. The time to find out as much as possible about survival in the water is before you are in the water . . . Good swimmers as well as weak swimmers will benefit from this lesson as anyone could be injured before or after abandoning ship . . . The majority of deaths in the water are caused by PANIC [Ref. 11:p. 3].

The U.S. Navy Water Survival Instructor's Guide states:

Environmental conditioning, or familiarity with the water environment enhances the ability to suppress fear and avoid panic . . . Scientific studies indicate that individuals who have been trained under realistic conditions have a



much better chance of survival. A well trained individual feels more confident and more in control of the situation [Ref. 37:p. 62].

Procedures for abandoning ship are described in LTG

4.1. It states:

Be as fully clothed as possible. Shoes and clothing may hinder you while you swim, but will be very helpful in the life boat for warmth and protection from the sun and elements [Ref. 11:p. 4].

Two of the RTC's conduct a short training exercise at the end of the survival at sea lecture as described in Chapter II. But, upon observation, the exercise contradicts the LTG, as the recruits are only partially clothed when they enter the water and are carrying their dungaree trousers across their shoulders. In fact, several recruits were observed to lose their grip on their trousers as they stepped off the platform and entered the water. The LTG describes the procedures for stepping off the ship and entering the water so as to avoid injury. After entering the water, it then states to, "swim 150 to 200 yards away from a sinking ship to avoid explosion and the suction of the whirlpool effect as the ship goes down." [Ref. 11:p. 6] If the member finds he must abandon ship into or near burning fuel oil, he must use, "the elementary backstroke, swim underwater and into the wind."

Procedures are described for donning and inflating life preservers. If, however, the member is placed in a situation where he must survive without a life preserver, the LTG describes various other objects that can be used as

flotation devices to aid in survival. The hat and dungaree shirt can be used as temporary flotation devices whereas the dungaree trousers can be inflated and used as a permanent flotation device. Procedures are described for inflation of the trousers once in the water,

Unbutton and slide trousers down to the knees. Roll into a jelly fish float and remove trousers, keeping a good grip on the trousers. Ensure both pant legs are either right side out or both inside out. Tie an overhand knot in each trouser leg, close to the cuff. Now, inflate by one of three methods:

1. SPLASH METHOD--lay the trousers out on the water with the waistband toward you, fly down. Swim backward through the water, splashing water and air into the trousers. Repeat until the trousers are fully inflated. Push trousers down to your waist, one leg on each side of you and float.
2. BLOW METHOD--lay out trousers with the waistband toward you, fly up. Take a deep breath, duck under water, and blow into the trousers with air until fully inflated. Push trousers down to your waist and float. NOT RECOMMENDED FOR WEAK SWIMMERS.
3. SLAM METHOD--place one trouser leg over each shoulder, with fly down and waistband away from you. Grasp the waistband on both sides, lift the trousers approximately 12 inches out of the water, and slam them down, trapping air in the legs. Push trousers down to your legs and float.

The procedures described above require significant skill levels beyond the minimum fourth class or even third class qualification level. A fourth class swimmer cannot make way in the water much less swim 150 to 200 yards away from a sinking ship. The jellyfish float is not taught to recruits. During observation of one recruit company, no recruits performed the jellyfish float during the five minute

float portion of the initial third class swim test. All recruits chose to float on their backs. In the section describing trouser inflation, the LTG does not mention the removal of shoes or boots first, which can be quite difficult. The U.S. Navy Water Survival Instructor's Guide states:

Removing the shoes, boots, trousers and inflating the trousers require considerable effort. Survivors should not wait until they are exhausted from treading water or swimming to attempt to inflate their trousers for support [Ref. 11:p. 55].

RTC San Diego Instruction 5400.18C of 18 November 1988 promulgates the standards of safety and qualification for its water survival program. It states:

The training recruits receive from WS&PT (Water Safety and Physical Training Division) has far reaching effects on their ability to cope in a water survival situation [Ref. 8:p. 2].

This statement appears to confer great responsibility upon the swim instructors conducting the training, more so than the "personal" responsibility of the trainee inferred by the CNTECHTRA instruction.

The confusion which was first evidenced in the MILPERSMAN permeates the RTC San Diego instruction which states, "Recruits are required to meet minimum requirements in accordance with reference (e) [MILPERSMAN] to qualify as third class and fourth class swimmers" [Ref. 8:p. 1-5]. What is the minimum, third or fourth class? It further describes the third class swim test where the 50 yard swim is performed

"after" the five minute float, vice "during". It further states that the Page 13 issued to fourth class swimmers gives them "one year from departure from Recruit Training Command to upgrade their qualification to third class swimmer." Who tracks this? The instruction goes on to say:

A recruit who does not qualify as a minimum third class swimmer on the first day will be required to return to pool #2 for another two hours of non-swim training before his 1-5 DOT (day of training). If he is still not qualified as a fourth class swimmer at the end of four hours, he will be assigned to WS&PT during Service Week for swim instruction [Ref. 8:p. 1-6].

This paragraph starts out by talking about third class swim qualification but ends by talking about the fourth class test. Finally, the instruction refers to the survival at sea (SAS) class conducted during the sixth week of training.

This class is a mandatory requirement for all recruits prior to "D" day. Recruits unable to demonstrate the qualifications during SAS class will be placed in a non-swim class [Ref. 8:p. 1-7].

What if the recruit already graduated from the non-swim class by passing the fourth class swim test? Will he go back if he fails SAS? Will he be given instruction in SAS skills in the non-swim class? All recruits are required to attend SAS but a demonstrated, minimum level of proficiency is not required in order to graduate from bootcamp.

RTC Great Lakes Instruction 1414.1M of 21 December 1984 promulgates standards for qualification of recruits in basic swimming and survival at sea techniques. This instruction quotes the definitions listed in the MILPERSMAN

for first, second, third and fourth class swim qualification. It also states that the third class swimmer must swim 50 yards "during" the five minute float. In this instruction, only non-qualified swimmers (NQS), are identified for referral to the remedial swim program. [Ref. 46:p. 1] Additionally, this RTC instruction provides a copy of its Page 13 which is issued to all fourth class swimmers. It states in its entirety:

Qualified this date as a fourth (4th) class swimmer in accordance with MILPERSMAN 6610140 at the Water Survival Training Tank, Recruit Training Command, Great Lakes, Illinois.

This Page 13 bears little resemblance to the one suggested by CNTECHTRA.

RTC Orlando Instruction 1540.4 of 12 November 1986 promulgates the swim standards for RTC Orlando. This instruction states that both fourth class swimmers and non swimmers will be assigned to the remedial swim program with the goal of achieving third class swim qualification [Ref. 9:p. 1].

Thus, to even the cursory reviewer, the guidance for the Navy's minimum swim qualification standards has been left open to interpretation. The specific qualification requirements appear ambiguous and unrelated to actual, life-threatening situations a sailor may face while serving in the fleet. From this it can be seen that the program, as currently administered, requires greater clarification.

In addition to these weaknesses, the quality of instruction Navy recruits receive is significantly different from that offered to individuals in other similar programs. This will be discussed next.

## **2. Comparison of RTC Programs**

The swim programs differ among the three RTC's. Each training center has published its own instruction which further delineates the specifics of their individual swim programs.

The RTC San Diego instruction states:

Survival at sea (SAS) is designed to reduce a person's fear of water, instill self-confidence, and develop an individual's ability to survive in the water. The minimum objective is to qualify all recruits and permanent personnel as third class swimmers . . . Non swimmers will be provided swim training with the objective of attaining a qualification as a third class swimmer . . . Minimum Qualified Swimmers: Recruits who achieve fourth class swimmer qualification but fail the third class swimmer test. These recruits will be assigned to the non-swim [remedial] program as directed . . . [Ref. 8:p. 1-2].

According to this instruction, all non swimmers and fourth class swimmers are assigned to remedial swim training in an effort to achieve third class swim qualification. Upon observation and discussion with WS&PT personnel, this is not actually taking place. A recruit company is administered the third class swim test. Those who pass are qualified. Those who fail (usually 25-30 percent of the company) are given one to two hours of swim training in the shallow end of the pool, immediately after failing the test. At the end of this period, these individuals are then administered a fourth

class test which most pass. Having met the Navy's minimum standard those who qualified fourth class do not return to the pool again until the sixth week of training to attend a SAS class. If fourth class swimmers were to continue in remedial training in an effort to achieve third class qualification as the instruction states, 25 to 30 percent of the recruits in an average company would be assigned to the remedial swim program. Those who fail the fourth class test do return for the remedial swim training. This procedure was modified somewhat in 1988 by RTC San Diego to provide the remedial training to non swimmers during "service week", the fifth week of training in which recruits receive practical experience working in the galley or other work assignments. Non swimmers are now to be assigned to the pool for the entire week where they receive up to 35 hours of remedial swim training. When this change was implemented, it was felt that recruits who had been in bootcamp for five weeks and had experienced the teamwork and loyalty with their companies would be more highly motivated to pass the swim test. Indeed, attrition due to swim failure decreased significantly at RTC San Diego after this change was implemented [Ref. 27].

At RTC Great Lakes, remedial swim instruction is conducted twice a week in the evenings for two hours for recruits who have not passed the fourth class test. If a recruit was able to step off the platform but was unable to pass the swim or float portion, he will not be required to

step off the platform in subsequent test attempts [Ref. 41]. According to the Red Cross, jumping into deep water, leveling off and swimming in a prone position is a necessary combined skill which is tested in the beginner course [Ref. 16:p. 134]. The Great Lakes platform is ten feet vice five feet in height (although a new, five-foot platform was to be constructed in April of 1989). The other two RTC's require recruits to step off the platform each time the test is taken.

At RTC Orlando, remedial swim instruction is held daily. The nonswimmers have until the fourth week of training to qualify as fourth class swimmers. Once qualified, they continue remedial training through the seventh week in an attempt to qualify as third class swimmers. Recruits who do not qualify as fourth class swimmers by the fourth week of training are taken out of their company and placed in a remedial swim unit for ten days. Until recently, if a recruit still had not passed the fourth class test after this time, he/she would begin administrative procedures which might lead to separation or the recruit may have received additional training time. This last procedure was changed with the guidance from CNTECHTRA to allow recruits who have not passed the fourth class minimum to remain in bootcamp until graduation whereupon they are placed in the "hold" unit until fourth class qualification is achieved. RTC Orlando has developed a



remedial swim program that is broken down into five training stations. As recruits master the basic skills of a station, they "graduate" and move on to the next station until they pass the third class swim test at station five. RTC Orlando has experienced less attrition due to swim failure than the other two RTC's (see Chapter IV).

### 3. Comparison to Other Swim Programs

The quality of instruction differs between the Navy RTC's and other swim programs. All personnel serving as pool instructors at the Navy RTC's must be minimum qualified Advanced Lifesavers with a goal of achieving Water Safety Instructor (WSI) qualification. These qualifications are achieved through the American Red Cross. According to the Red Cross, the advanced lifesaving course is 30 hours and the WSI course is an additional 45 hours of instruction [Ref. 47]. Although advanced lifesavers are equipped to save lives, they are not necessarily equipped to teach swim skills.

Pool instructors are company commanders who rotate in and out of the Water Safety and Physical Training Division as they lead companies for four to six months then return to the pool as their hold job. Maintaining a fully qualified staff becomes difficult when new, unqualified staff members are continually being assigned to WS&PT and advanced life-saver qualified staff members are rotated out of the division to lead companies. Two other services, the Coast Guard and the

Marine Corps, were selected as points of comparison and contrast with the Navy's swim program. Naval Officer accession programs were reviewed as well. The Army and Air Force bootcamps do not have a swim qualification requirement. The American Red Cross Swimming and Aquatics Safety Course will also be described as an additional point of reference.

a. Coast Guard

The Coast Guard Training Center in Cape May, New Jersey trains approximately 7000 recruits each year. An extensive swim and survival course is administered to these recruits. There are nine staff members at the pool, all of whom are WSI qualified. The Chief Petty Officer in charge of the swim program is able to pick up most of his instructors from bootcamp (the best swimmers) immediately upon graduation. They then serve a two year dedicated tour of duty after qualifying as WSI's [Ref. 48].

During the second week of their eight weeks of training, Coast Guard recruits must step off of a 1.5 meter platform into the water, swim 100 meters (not on their back) and tread water for the remainder of five minutes. This test is more stringent than the Navy's third class test but no one graduates from the Coast Guard until this requirement is achieved. Individuals who cannot perform this test are allowed an additional 40 hours of swim instruction in order to qualify. During the previous calendar year, only one recruit had been discharged due to failure to swim qualify.

Recruits receive an additional eight and a half hours of survival training which includes drownproofing, clothing inflation, simulated underwater swim through burning surface oil, boarding a 25-man life raft, entering the water from a three meter platform and donning a PFD. The training is conducted in an indoor, heated olympic size pool. Companies have about 60 recruits vice 80 in the Navy and there is only one company per training day whereas the Navy frequently has two.

b. Marine Corps

The Marine Corps Recruit Depot (MCRD) in San Diego is one of the two training centers for Marine recruits. The Marines process approximately 45,000 recruits each year in San Diego and Parris Island, South Carolina, with about 60 percent being trained in San Diego. Bootcamp has recently been increased from eleven to twelve weeks to include more combat training. The swim program consists of 16.5 hours of swim and survival training and testing. Although aspects of the program are specifically tailored to the needs of Marines who must frequently wade through neck-deep water with full combat gear when making an amphibious landing, the minimum swim qualification exceeds that of the Navy. Survivor, Third Class (S3) skills are the minimum required to graduate and have included wearing of camouflage uniforms during swim segments. In March of 1989, a pilot program was introduced to further emphasize training under combat situations. Full

combat gear including boots and weapon are now worn or carried during all wading and swim tests, except for a final jump from a ten foot platform followed by a 25 meter swim. As of 17 April 1989, about 2000 recruits had completed the pilot program and only two had not met the new pilot program requirements, although they were able to meet the existing standards. Efforts are currently underway to issue a new Marine Corps Order specifying the new requirements [Ref. 49, 50].

Instructors at the swim tank at MCRD are all qualified WSI and have also qualified in Marine specific water safety and survival instructor training provided by one of the Landing Force and Training Commands (LFTC). This qualifies them as WSSI's, Water Safety and Survival Instructors, and becomes their specialty in the Marine Corps. They are assigned to the swim tank for two year dedicated tours of duty, and they provide one on one instruction to the recruits undergoing training.

Marine Corps recruit training is conducted in phases with the swim training occurring during these phases. During Phase I on training day six the recruits receive:

1. Water safety and facility brief
2. Third Class Survivor (S3) swim test qualification brief and demonstration
3. Waterproofing class in which recruits learn how to pack their equipment to enhance water tight integrity.
4. Training on how to put their gear on their backs

5. Initial screening. Wearing utilities, recruits step off of the five foot platform and swim 15 yards. Problem swimmers are identified.

6. Third Class qualification testing begins.

Recruits return to the pool on their 39th day of training during Phase III to upgrade their skills. Effort is made over the next three training days to upgrade the swim and survival skills of recruits as high as they can achieve. During the pilot program, approximately 81 percent of recruits qualified as third class survivors, 18 percent qualified as second class survivors and less than one percent qualified as first class survivors.

A description of the third class test follows. While wearing camouflage uniforms, a 51-lb. pack, flak jacket, cartridge belt, two magazine pouches, helmet strapped on the back of the pack and carrying a rifle a recruit:

1. Enters waist-deep water and walks 20 yards
2. Walks 40 yards in chest-deep water
3. Walks 60 yards in neck-deep water. He is then taught to "travel" by taking three strokes with his arms and legs then coming up to breathe.
4. Performs a one minute float in deep water, with no kicking (drownproofing)
5. Performs a 40 yard travel in deep water, always on the forward side of his body
6. Exits the water and re-enters from a five foot tower with complete gear. Recruit travels ten yards then must remove his pack, put his helmet on his head, place his rifle on the pack and using the pack as a kickboard, travel 25 yards.

7. Exits the water and drops his pack, helmet, rifle and flak jacket
8. In camouflage and boots, enters the water from a ten-foot platform and swims 25 meters.

Recruits who cannot pass this test are assigned to the pool during service week for seven days of remedial swim training. Efforts are currently underway to incorporate inflation of clothing, now required in the first class test, into the third class test.

The water survival skills of Marines have been considered important enough to provide 16.5 hours of swim training and testing. Even though they may have passed the minimum third class survivor test, recruits continue to upgrade their skills during the remainder of training time allowed.

The swim test has been designed to simulate, as closely as possible, an actual scenario a Marine may face during exercises or combat, fully clothed and with gear. The test is more stressful and difficult than the Navy fourth class minimum, but the Marine Corps is enjoying greater success in qualifying its recruits. Training is conducted in an indoor heated pool, 15 by 25 meters in size. Attrition due to swim failure is almost non-existent. [Ref. 51] During the period from March 1988 to March 1989, only one recruit had been discharged due to swim failure.

The swim program is administered by specialists who have undergone significant training in water safety and

survival and are qualified to teach these skills. The instructors are dedicated to the pool for their tour and do not rotate out to lead companies every few months. One on one attention is provided to each recruit.

The Marines emphasize confidence building as well as water survival in their swim program. [Ref. 50, 51] Survival skills are considered an on-going effort and Marines must qualify every year until qualified one level higher than their military occupational specialty (MOS).

#### c. Officer Accession Swim Programs

Although the MILPERSMAN is cited as the official guidance for minimum swim qualifications, future Naval officers must pass a minimum third class swim test at Officer Candidate School (OCS) and Reserve Officer Training Corps (ROTC) while the Naval Academy maintains a more vigorous swim program.

OCS is approximately 16 weeks long and is conducted in Newport, Rhode Island. Candidates must pass a minimum third class swim test in order to graduate. They step off of a twelve foot tower, float for five minutes, then swim 50 yards. [Ref. 52] Additionally, all officer candidates receive instruction in survival at sea summarized as follows:

1. Students receive a lecture and must demonstrate an underwater swim simulating a burning surface oil scenario. Students perform a 25 foot underwater swim, splashing the surface as they come up for air. They repeat for a 35 foot and 75 foot underwater swim.

2. Students learn and demonstrate clothing inflation.
3. Students learn and demonstrate a 30-minute float using the drownproofing method.
4. Students learn about and don a PFD, step off the twelve foot tower remove the PFD in the water and put it back on again.

A total of seven laboratory periods have been allocated for swim and survival instruction, testing and demonstration as indicated by the Naval Officer Candidate Course Lesson Topic Guides 9.31 - 9.35. The program is conducted in an indoor heated pool, 15 by 35 yards in size. Three swim instructors are permanently assigned to the pool. Two are government civilians and one is a senior chief assigned to shore duty. All are WSI qualified.

ROTC students are trained at various college campuses throughout the United States. but all must pass the minimum third class swim test as well. Midshipmen are required to requalify every year they are in the program, with the objective of achieving first class qualification prior to commissionings. [Ref. 53]

The U.S. Naval Academy has an extensive swim program which students are required to pass in order to graduate. [Ref. 54] They are graded on swim performance as a part of their curriculum. Already proficient swimmers are allowed to take a validation test to exempt them from this training.



Plebes are initially tested in their basic swim skills. They must perform:

1. 50 meter sidestroke
2. 50 meter elementary backstroke
3. Jump into the water
4. Underwater swim
5. Crawl stroke

Those who fail are placed in the "sub squad" where they receive remedial training. Plebes receive a total of twelve swim lessons during their first year. At the end of that time they are tested to complete a:

1. 100 meter swim
2. Survival treading to include five minutes of drownproofing and 15 minutes of treading water. Sophomores (Third Class Midshipmen) receive another twelve swim lessons.

They are then tested to perform:

1. 50 meter breaststroke
2. Jump from a 10 meter tower
3. Swim 50 feet underwater from a surface dive
4. Jump into pool, disrobe trousers, inflate and float for three minutes.
5. 200 meter timed swim using any stroke

Juniors (Second Class Midshipmen) receive ten swim lessons. They are introduced to lifesaving but are not certified. They are however, graded in five lifesaving skills. Additionally, they are tested in:

1. 400 meter timed swim

2. Five meter jump and 20 meter underwater swim

Finally, seniors (First Class Midshipmen) receive six swim lessons. They are retested in jumping and clothing inflation. The final test is a 40 minute swim, performed in khakis with no shoes. The more laps a midshipman can complete during this time, the better his grade. The swim program is conducted in an indoor heated olympic size pool by permanent swim coaches and staff.

Although the MILPERSMAN is cited as the official guidance, officers must pass a higher standard, minimum third class, in order to graduate from their respective programs. According to those interviewed, attrition due to swim failure rarely occurs. The differences between all these programs as well as the RTC's may be a function of time. Officer accession programs vary in length but all are longer than bootcamp. Additionally, it may be felt that officers should achieve higher standards than the average enlisted member.

#### d. American Red Cross

American Red Cross Swimming and Aquatics Safety describes the background of swimming and the entire teaching and learning process for beginning swimmers. Chapter five is devoted entirely to the elements of successful teaching and describes optimal teaching approaches and techniques as well as class organization. Very basic skills such as breath control, seeing underwater, prone glides and back glides are

covered extensively. It is obvious from reading this manual that the non-swimmer is taught slowly but sequentially, the most fundamental to the more difficult swim skills.

Chapter twelve describes the Beginner through Advanced Swimmer Courses, the skills the student must achieve in order to pass each course, and the average amount of time in which the student is expected to do so.

The Beginner Course recommends a minimum of ten periods of from 30 to 45 minutes in length or about five to seven and a half hours total. Students are taught how to breathe, float, perform the survival float, glide and beginning crawl stroke. They are also taught how to enter the water and level off. Artificial respiration and other safety information are taught. Students must pass two tests which combine their skills:

1. Combined Skills No. 1--The student jumps into deep water, levels off and swims 20 yards using either the beginner stroke, the crawl stroke or the combined stroke on the back.
2. Combined Skills No. 2--The student jumps into deep water, does the survival float for one minute, levels off on the front or back and swims ten yards to safety.

In a relatively short period of time, non-swimmers can be taught basic swim skills, some of which surpass the Navy's fourth class swim requirement.

Once accomplished, the student may go on to the Advanced Beginner Course. No minimum or maximum course length is specified. Students are taught further breath

control, survival float, stroke techniques and improvements, treading water, diving, underwater swimming, use of PFD's and more on personal safety and basic rescue. The Combined skills test is as follows:

1. Student dives into deep water, surfaces and swims crawl stroke for 20 to 25 yards.
2. Student jumps into deep water, surfaces and swims elementary backstroke for 20 to 25 yards.
3. Student dives into deep water, swims at least three but no more than four body lengths underwater, surfaces and performs survival stroke for two minutes in deep water.

These skills would enable a recruit to pass the Navy third class swim test. One Red Cross Swim Instructor indicated that anyone who desires so can learn how to swim. In her experience conducting adult swim classes at Fort Ord, California, all but one of 120 students were able to:

1. Dive into the water in good form
2. Swim 50 yards
3. Tread water for five to ten minutes
4. Perform mouth to mouth resuscitation

These skills were demonstrated after ten, one hour classes spread out over a three-week period. [Ref. 47] All students began as nonswimmers, but their skill levels achieved surpassed the minimum requirements of the Navy third class swim test. The RTC's allow up to 35 hours and more of remedial training just to enable a recruit to step off of a five foot platform and float for five minutes. The Red cross Instructor's classes were small with the largest size

reaching 22, but she was the only instructor at the pool whereas the RTC's have more personnel assisting, supervising and training.

It is interesting to note that the Navy guidance states that the American Red Cross Swimming and Water Safety Manual is the "authoritative text for the swimming procedures, strokes, breaks holds etc." for the swim tests administered to Navy recruits. But, there is little correlation between the skills specified in the Navy's third and fourth class test and the Red Cross' Beginner and Advanced Beginner Combined Skills tests.

It is apparent after examining other swim programs that these programs enjoy greater success at training more highly skilled water survivors than do the Navy RTC's. The Red Cross Swim program is able to equip its adult non-swimmers with basic swim skills in a relatively short period of time compared to the time allotted for the Navy's remedial swim program. Some basic differences are summarized as follows:

1. The Coast Guard and Marine Corps as well as all Naval Officer accession programs, allocate more time in their curricula for swim and survival training than does the Navy.
2. The minimum swim qualifications for Coast Guard and Marine Corps recruits exceed those for Navy recruits.
3. OCS and ROTC requirements exceed those for Navy recruits. Naval Academy requirements are more stringent than all other Navy swim programs.

4. Survival Training beyond the minimum swim test is emphasized more heavily in the other programs.
5. Attrition due to failure to swim qualify has been less in the other services and officer programs than that experienced by Navy recruits.
6. Instructors in the Coast Guard are all WSIs and those in the Marine Corps are WSSI qualified. Navy instructors at the RTCs are all Advanced Lifesavers, a lesser qualification which, according to the Red Cross, may be appropriate for life saving but not necessarily for teaching swim skills.
7. Instructors in the Coast Guard and Marine Corps serve two year, dedicated tours teaching and testing recruit swim and survival skills. Instructors in Officer accession swim programs are permanently assigned. Instructors at the Navy RTCs are frequently rotated.

In August and September of 1988, the Naval Aviation Water Survival Training Program Model Manager was requested by CNET to observe and evaluate the swim testing and training programs at the three RTCs. In a point paper prepared for CNET, which summarized his trip, the Model Manager stated:

Quality, content and method of training is inadequate to prepare Navy personnel for fleet duty or to pursue normal off-duty recreational sports/hobbies . . . No billets for permanent, dedicated swimming instructors are assigned . . . Instructors lack adequate training and sufficient experience to prepare recruits for fleet duty [Ref. 34].

He also disagreed with the practice of having recruits step off the tower as the first order of business at the pool. Although recruits are asked to raise their hand and step aside if they know they cannot pass the swim test, many recruits from one company were observed to attempt the test anyway and had to be rescued by an instructor. The Model

Manager feels this practice is not only dangerous but places the nonswimmers at a mental disadvantage as their first experience in the water has been an unpleasant one. [Ref. 38] He advocates instead starting the entire company in the shallow end of the pool, learning basic breathing skills first. Those who are more advanced will progress to the deep end while the nonswimmers remain in the shallow end practicing the fundamentals.

One may wonder why these differences exist, especially since all these services operate in and around a water environment. Additional inconsistencies in the Navy can be found. Other fitness, safety and health programs require periodic updates or refresher training but swim qualifications are checked only once in the average sailor's career. These inconsistencies will be highlighted next.

#### 4. Other Inconsistencies

There are many examples of other Navy programs which do require periodic training or testing.

OPNAV Instruction 6110.1C delineates the minimum physical fitness standards for all military personnel. A minimum level of physical fitness has been determined to be a requirement for fleet readiness, and testing of all personnel is conducted twice a year throughout a member's career. Failure to meet bodyfat standards is reflected in evaluations and fitness reports and could eventually lead to administrative separation.

All personnel are required to pass minimum medical requirements in order to serve in the Navy. Quadrennial and annual physical examinations follow through an individual's career.

OPNAV instruction 1500.22D describes the purpose of General Military Training (GMT):

GMT trains, motivates and informs Navy personnel to transition into military life and to deal with those issues that impact on their military career and with those personal matters which arise from service life.

A GMT program is a requirement at every Naval command. The instruction lists topics to be covered. These include nutrition education, motor vehicle safety, recreational safety, first aid, physical readiness, industrial safety, smoking prevention and cessation and others. Swim skills and or survival at sea are not included in these topics.

The Navy's Consolidated Subject Index lists every instruction printed for the Navy. It lists numerous safety and occupational health programs and accident prevention instructions.

Safety is the pre-eminent consideration aboard a Naval vessel. The Navy Ship Technical Manual, Standard Organization and Regulations of the U.S. Navy and numerous bureau and systems manuals all contain written safety regulations that are to be strictly adhered to. Constant drilling and exercises for General Quarters, man-overboard etc. constitute the routine that makes up shipboard life.



Water survival skills have not received the same emphasis as these other fitness, safety or health programs. The average sailor is tested once in his career, and at a very minimal level. Why this particular area has been overlooked in the Navy's follow-on training and safety programs is a question that remains unanswered.

## VI. CONCLUSIONS AND RECOMMENDATIONS

### A. CONCLUSIONS

The Navy, as well as other DOD agencies, is in a budget cutting era. Secretary of Defense Richard B. Cheney has been asked to trim the DOD budget by billions of dollars. Such drastic cuts will certainly affect everything from the sacred defense procurement programs to the softer, less visible training programs. Yet, the Navy's mission and objectives have not changed. More than ever, sailors with the requisite skills and training are needed to handle complex systems. The need to exploit every potential a sailor possesses is greater than ever. Confident, capable young men and women, able to respond to a variety of situations is required.

Every sailor should receive instruction, practice and testing in survival at sea skills. This is the opinion of many experts and commanding officers. Yet, the current swim qualification requirement tests only a sailor's ability to keep his head above water for five minutes in a safe, controlled environment. The emphasis has been disproportionately directed to creating a safe environment at the testing pool rather than training under more realistic conditions. The quality of instruction Navy recruits receive is inferior to that of officer swim programs as well as Coast Guard and Marine Corps recruit programs. If the hypothesis

is accepted that the average officer candidate comes from a more advantaged socio-economic background than the average enlisted man/woman, why is more swim training provided to the officers than to the enlisted?

The existing guidance has been widely interpreted, resulting in different programs administered at each RTC. Although considered a safety issue, survival at sea skills have not received the same attention and emphasis as other safety health or fitness programs. Periodic refresher training, testing or drilling is not required to maintain proficiency, as these other programs mandate.

Drowning statistics of Naval personnel, while incomplete, do offer an interesting reference point. It appears that junior enlisted personnel are the most frequent victims of man-overboard or off duty drownings and that in some cases, their inability to stay afloat has cost them their lives.

Failure to swim qualify has, in the past, resulted in attrition from bootcamp. But, this has changed with guidance from CNTECHTRA and forthcoming guidance from OP-01. While the intent of this policy change is to reduce attrition, the overall effect is will have on minimum swim requirements, attrition and retention is questionable.

It is perhaps time for the Navy to rethink the entire swim program. The current program, while questionable, has been made even more ill-defined by the recent OP-01 decision. It is clear that a host of problems need to be addressed

beginning with revising the training to adequately prepare sailors to survive in the open water. The measures taken until now have been reactionary and have failed to evaluate the validity of the entire program.

A comprehensive review of this situation leads to the conclusion that it is possible for the Navy to develop and implement a survival at sea program which will:

1. Increase the confidence and water survival capability of its sailors
2. Reduce attrition
3. Utilize fewer hours of remedial swim training
4. Save Lives and the associated dollar costs
5. Improve overall program at little additional cost.

Recommendations by the Model Manager as well as the successful models provided by the other swim programs serve as basic reference points for specific recommendations.

#### B. RECOMMENDATIONS

Recommendations to improve the water survival programs are as follows:

1. Establish a comprehensive Navy-wide program to provide every sailor with basic water survival skills at all accession points.
2. Require periodic retesting/training at follow-on schools or commands coincident to the semi-annual Physical Readiness Test or the quadrennial physical etc.
3. Revise the MILPERSMAN & all other guidance to reflect specific requirements and reduce ambiguity.

4. Develop a survival at sea lecture with audio-visual aids to distribute to every command for periodic use in GMT.

At the recruit training level:

1. Revise the Navy swim qualification to third class survivor (delete fourth class qualification). Teach and test recruits in basic swim skills, drownproofing, clothing inflation, and simulated underwater swimming. The stringent distance swimming requirements at the Naval Academy are not advocated. Survival depends more upon the ability to stay afloat and remain calm for extended periods of time.
2. Increase training time at the pool. Training objectives can be combined to include survival at sea while teaching qualities such as attention to detail or teamwork. For example, some of the time currently being used for recruit infantry practice could easily be allocated to a program which may help save their lives.
3. Revise the training approach to assume recruits cannot swim. Follow Red Cross guidelines for training with a progression of skills.
4. Assign a full time, permanent Water Safety Instructor to each RTC to be in charge of the swim program. This position can be military or civilian.
5. Provide for WSI qualification for all staff members at WS&PT as a vigorously pursued objective.

These steps, if implemented would significantly improve the Navy's swim qualification program, the individual member's chances of survival in an open water situation, and would enhance the overall operational readiness of the Navy.

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